

Claims:

1. An electrical energy meter comprising an electrically insulating housing for securing relative
5 to least two mains cables each having a conductive core surrounded by a sheath of insulating material, the housing including respective electrical contact means for piercing the insulating sheath of each cable to make contact with the core, sensing means for providing
10 an output corresponding to the current flowing in at least one of the cables, and circuit means for calculating and displaying electrical energy as a function of the voltage across the contact means and the output of the sensing means.
- 15 2. An electrical energy meter according to claim 1, wherein the housing comprises first and second parts which are movable with respect to one another from a first position in which the cables may be introduced
20 into the housing, to a second position in which the cables are secured relative to the housing.
3. An electrical energy meter according to claim 2, wherein the movement of the housing parts between the
25 first and second positions causes the electrical contact means to automatically pierce the cables.
4. An electrical energy meter according to claim 2 or 3, wherein the housing parts are separate from one
30 another when in the first position, and wherein the housing parts are secured together in the second position.

5. An electrical energy meter according to claim 2 or 3, wherein the housing parts are connected together in an open position to receive the cables in the first position, and are closed towards one another in the second position to secure the cables therein.

6. An electrical energy meter according to claim 2, wherein the first part is a back plate having means for receiving the cables and wherein the second part is a front plate which abuts against the back plate, with the cables held therebetween, one of said back plate and front plate being provided with said contact means, whereby the cables are squeezed onto said contact means when the back and front plates are brought together.

7. An electrical energy meter according to claim 2, further comprising means for locking the first and second housing parts together in the second position.

8. An electrical energy meter according to claim 7, further comprising security means which co-operate with the locking means to indicate if the locking means has been tampered with.

9. An electrical energy meter according to any preceding claim, wherein all of the power requirements of the meter are drawn from the mains cables.

10. A current probe for measuring current in a conductor, comprising a plurality of coils connected together in series in an arrangement which substantially surrounds the cable in which current is to be measured.

11. A current probe according to claim 10, wherein said coils are Rogowski coils.

5 12. A current probe according to claim 10 or 11,
wherein said coils are substantially equidistantly
spaced in the form of an open loop, with a gap being
provided between the first and last coils in the loop,
said gap enabling introduction of the mains cable into
10 the interior of the loop.

13. A current probe according to claim 12, wherein said loop is a circle having a gap therein.

15 14. A current probe according to claim 10 or 11,
wherein said coils are arranged in two concentric loops
of coils, each loop being connected in series, and each
loop having a gap between two of the coils in the loop,
said gaps enabling introduction of the conductor into
20 the interior of the concentric loops.

15. A current probe according to claim 14, further comprising an electronic circuit for comparing the pickup from external sources experienced by each of the two loops and providing an output which compensates for such pickup, based on the respective dimensions of the loops.

30 16. ~~An electrical energy meter according to any one of~~
claims 1-9, wherein the sensing means comprises a
current probe according to any one of claims 10-15.

17. An electrical energy meter, substantially as
hereinbefore described with reference to Figs. 3-9 of
the accompanying drawings

5 18. A current probe, substantially as hereinbefore
described with reference to Figs. 7-9 of the
accompanying drawings.

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